Jupiter.

May	1,	21	12	—	16	46	1	37	A.M.	6	39	A.M.	11 41 A.M.
June	1,	21	20	—	16	19	11	42	P.M.	4	45		9 48
July	1,	21	16	—	16	43	9	41		2	43		7 45

Saturn.

May	1,	19	59	—	20	35	12	39	A.M.	5	26	A.M.	10 13 A.M.
June	1,	19	58	—	20	43	10	37	P.M.	3	23		8 9
July	1,	19	51	—	21	4	8	33		1	18		6 3

Uranus.

May	1,	17	20	—	23	12	10	7	P.M.	2	43	A.M.	7 19 A.M.
June	1,	17	15	—	23	8	8	4		12	41		5 18
July	1,	17	10	—	23	2	5	56		10	33	P.M.	3 10

Neptune.

May	1,	5	57	+	22	20	8	3	A.M.	3	23	P.M.	10 43 P.M.
June	1,	6	2	+	22	21	6	4		1	25		8 46
July	1,	6	6	+	22	21	4	11		11	32	A.M.	6 53

ECLIPSES OF *JUPITER'S* SATELLITES, P. S. T.

(Off left-hand limb as seen in an inverting telescope.)

I, D,	May	7,	4^h	56^m	A.M.	III, D,	June	1,	9^h 19^m P.M.
II, D,		7,	11	55	P.M.	III, R,		2,	12 50 A.M.
I, D,		8,	11	24	P.M.	IV, D,		6,	11 26 P.M.
II, D,		15,	2	29	A.M.	IV, R,		7,	3 59 A.M.
I, D,		16,	1	19	A.M.	I, R,		8,	1 29 A.M.
I, D,		23,	3	12	A.M.	II, D,		8,	11 27 P.M.
I, D,		24,	9	41	P.M.	III, D,		9,	1 19 A.M.
I, D,		31,	11	35	P.M.	III, R,		9,	4 50 A.M.
						I, D,		15,	3 23 A.M.
						II, D,		16,	2 1 A.M.
						I, D,		16,	9 12 P.M.
						II, D,		23,	4 35 A.M.
						IV, R,		23,	10 7 P.M.
						I, D,		23,	11 46 P.M.

APPROXIMATE ELEMENTS OF THE ORBITS OF THE COMETS FROM 1896 TO 1901.

BY W. J. HUSSEY.

In number 50 of these *Publications* (June, 1896), a number of tables compiled by the late Professor WINLOCK are printed, giving the approximate elements of all computed orbits of comets

from B. C. 372 to A. D. 1896. The following table of the approximate elements of the comets which have appeared during the years 1896 to 1901, inclusive, is intended as a continuation of Professor WINLOCK's first table, and it is arranged in the same manner:—

APPROXIMATE ELEMENTS OF THE ORBITS OF THE COMETS FROM 1896 TO 1902.

Number.	T	ω	☊	*i*	*q*	*a*	*P*	*e*	Discoverer.
420.....	1896 I Jan. 31.8	358°.5	254°.8	155°.9	0.588	....	....	....	PERRINE.
421 F....	1896 II Mar. 19.3	201 .2	209 .8	11 .3	1.738	3.854	7^{y}.57	0.549	
422.....	1896 III April 17.6	1 .7	178 .3	55 .6	0.566	....	....	....	SWIFT.
423.....	1896 IV July 10.9	41 .0	151 .0	88 .4	1.142	....	....	....	SPERRA.
424.....	1896 V Oct. 26.0	139 .5	192 .1	11 .6	1.482	3.500	6 .55	0.657	GIACOBINI.
425 Bro..	1896 VI Nov. 4.2	343 .8	18 .0	6 .1	1.959	3.684	7 .072	0.469	
426.....	1896 VII Nov. 24.6	163 .9	246 .6	13 .7	1.110	3 462	6 .441	0.677	PERRINE.
427.....	1897 I Feb. 8.1	172 .3	86 .3	146 .1	1.062	....	....	....	PERRINE.
428 d'A..	1897 II May 27.3	173 .0	146 .3	15 .7	1.324	3.551	6 .691	0.627	
429.....	1897 III Dec. 8.8	66 .1	32 .1	69 .6	1.356	....	....	....	PERRINE.
430.....	1898 I Mar. 17.4	145 .1	262 .5	72 .5	1.099	....	....	....	PERRINE.
431 W...	1898 II Mar. 20.4	173 .3	100 .9	17 .0	0.924	3.235	5 .818	0.725	
432 E. ..	1898 III May 27.8	184 .0	334 .8	12 .9	0.341	2.218	3 .303	0.846	
433 Wo..	1898 IV July 4.6	172 .9	206 .5	25 .2	1.604	3.597	6 .821	0.557	
434.....	1898 V July 25.5	22 .4	278 .3	166 .9	1.501	....	....	....	GIACOBINI.
435.....	1898 VI Aug. 16.2	205 .6	259 .1	70 .0	0.627	....	....	....	PERRINE.
436.....	1898 VII Sept. 14.1	233 .3	74 .0	69 .9	1.702	....	....	....	CODDINGTON.
437.....	1898 VIII Sept. 20.1	4 .6	91 .8	22 .5	2.269	....	....	....	CHASE.
438.. ...	1898 IX Oct. 20.5	162 .4	34 .9	28 .9	0.420	....	....	....	PERRINE.
439.....	1898 X Nov. 23.2	123 .6	96 .3	140 .4	0.756	....	....	....	BROOKS.
440.....	1899 I April 13.0	9 .0	25 .1	146 .3	0.325	....	....	....	SWIFT.
441 Ho..	1899 II April 27.7	14 .1	331 .7	20 .8	2.128	3.615	6 .90	0.411	
442 Tu. .	1899 III May 4.5	206 .7	269 .9	54 .5	1.024	5.724	13 .76	0.822	
443 T2 .	1899 IV July 28.5	185 .6	121 .0	12 .6	1.389	3.033	5 .281	0.542	
444.....	1899 V Sept. 15.0	10 .9	272 .2	76 .9	1.785	....	....	....	GIACOBINI.
445.....	1900 I April 29.1	24 .6	40 .4	146 .4	1.329	....	....	....	GIACOBINI.
446.....	1900 II Aug. 3.2	12 .4	328 .0	62 .5	1.015	....	....	....	BROOKS-BORRELLY.
447.....	1900 III Nov. 28.3	171 .5	196 .5	29 .9	0.934	3.617	6 .66	0.742	GIACOBINI.
448.....	1901 I April 24.3	203 .0	109 .6	131 .1	0.245	....	....	....	(Great Comet).
449 E. ..	1901 II Sept. 15.3	184 .0	334 .8	12 .9	0.341	2.219	3 .303	0.846	

The abbreviations used in the first column to designate the periodic comets on their return to perihelion are as follows:

d'A. = D'ARREST'S comet.
Bro. = BROOK'S comet.
E. = ENCKE'S comet.
F. = FAYE'S comet.
Ho. = HOLME'S comet.
T2 = TEMPEL'S second periodic comet.
Tu. = TUTTLE'S comet.
W. = WINNECKE'S comet.
Wo. = WOLF'S comet.